PRESSURE ON THE WATERFRONT WITH SPECIAL REFERENCE TO THE MANDURAH-MURRAY REGION

By C. F. H. JENKINS, M.A.

Western Australia occupies one-third of the driest continent in the world and so the State's future development, both agriculturally and industrially, will be limited by the availability of water. But as the population grows and its sophisticated wants become more urgent, it is clear that all our water resources, both fresh and salt, will be threatened with over-exploitation.

When Willem de Vlamingh sailed up the Swan River in January, 1697, just over 250 years ago, he commented upon "the swans, the cormorants, the pelicans, the geese, the cockatoos, the parroquets, etc.", and for the first 50 years of settlement the Swan Estuary and the associated swamps remained a paradise for wild life of all kinds.

In more recent years however, the main river estuaries from the Murchison to the south coast have been affected either by holiday settlements, industrial development or reclamation, all in the name of progress.

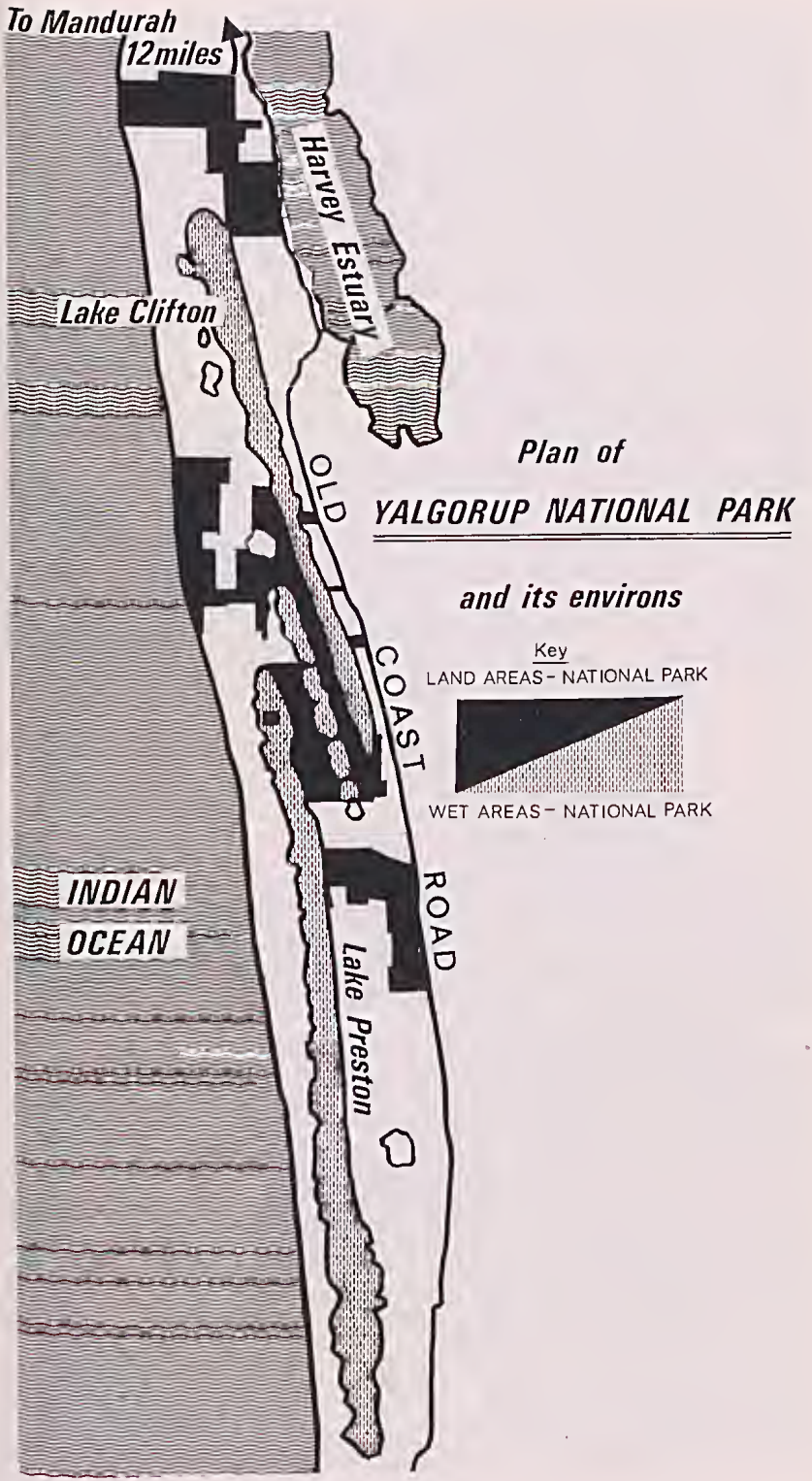
Drastic changes were inevitable as Perth and its environs grew. Serventy (1948) has described, and reproduced early maps, showing how the lakes and swamps which dotted what is now the metropolitan area, were progressively drained. Important city buildings, such as the Perth railway station and the General Post Office, now stand on what was swamp land. Until fairly recently the outer swamps and the river foreshores still provided what many people regarded as limitless cover. Pressure continued, however, and during the past decade many miles of natural shoreline have been replaced by stone walls or dredged sand, and the biological usefulness of many swamps has been destroyed or downgraded in the name of mosquito destruction, rubbish disposal or just "development." In many instances, mosquito and midge problems have been complicated rather than improved by the present policy, because housing development has often been permitted too close to the "waterfront," with the result that affected ratepayers press either for insecticide treatments or further reclamation. Had the original plans allowed for a wider buffer between the shore line and the first house, the residents would have been spared much annoyance from insect pests and the district would have had extra and much needed public open space.

Despite metropolitan changes, the major estuaries to the south, and the more remote lakes and swamps of the Swan coastal plain still seemed to offer long-term security for most of our water-loving birds. In actual fact, however, approximately 500,000 acres of wetland have been drained in the South West by 1,200 miles of channels (Riggert, 1966) and important projects contributing to the change were the Harvey irrigation scheme with its associated Harvey River Diversion and the draining of the Peel Estate.

More recently the threat has been accentuated not only to our lakes and rivers, but also to our shore line, by the population explosion with its attendant industrial and housing developments and the sophisticated wants of "A State on the Move."

Even the salt lakes of the wheat belt are facing a new threat as good roads and four-wheel drive vehicles make once remote areas available to shooters, campers and water skiers. The wash of power boats and the roar of outboard motors exemplify just two of the many ways in which the affluent society can debase a biological habitat, not by deliberate vandalism, but by ignorance and over exploitation.

The rapid increase in holiday homes and the proliferation of shacks at water resorts, both north and south of Perth, are subjecting beauty spots and the associated wild life to ever increasing dangers. Town planning authorities are recommending more orderly development for the future, but pressures from vested interests are constant, plausible and unrelenting. Already several "Gold Coast" type projects have been suggested for areas between Perth and Bunbury, and the effect of these on the environs of the Peel Inlet and the Harvey Estuary could be disastrous.


To Mandurah
12miles
Harvey Estuary
Lake Clifton
OLD
COAST
ROAD
INDIAN
OCEAN
Lake Preston
Plan of
YALGORUP NATIONAL PARK
and its environs
Key
LAND AREAS - NATIONAL PARK
WET AREAS - NATIONAL PARK

With the continued progress in the region and, particularly, with the growing population of Pinjarra, Mandurah and Bunbury, the upgrading of the Old Coast Road and the consequent destruction of the verge flora, areas such as the Yalgorup National Park and the associated lakes will exist as "islands" in a sea of alien development.

For many years agricultural expansion between Mandurah and Bunbury was retarded by minor element deficiencies in the coastal sands, but modern fertilisers have now remedied this with the result that grazing paddocks and irrigated lucerne plots are taking over from the native bush.

A pleasing feature of some pasture development in the area is the park-like effect resulting from the larger tuarts, marris and jarrahs having been left as shade trees. Unfortunately however, the stocking of such areas prevents most regeneration and although the "park clearing" system is desirable in the short term, it is no substitute for fully protected reserves.

The great importance of the Peel Inlet (Anon, 1962), and the adjacent lakes to Western Australian waterfowl was emphasised in the drought years of 1969 and 1970 when wild ducks, swans and many other aquatic species owed their survival to the coastal waters south of Mandurah. Every year thousands of birds move to the coastal wetlands to pass the summer, but as the recent drought reduced most of the inland lakes to mud puddles or glistening wastes of salt the influx of birds was much heavier than usual.

I have made periodic visits to Lakes Preston and Clifton over the past 30 years, but regular checks from 1968 and three-weekly observations with binoculars (16 x 56) at one spot in Lake Clifton from December, 1970 to May, 1971, confirmed earlier views on the value of the region. A variety of waterfowl was present throughout the late summer with the following numbers estimated for each inspection at Lake Clifton on the two-mile stretch of water under observation:—

Coots	1000+
Musk Ducks	1000+
Black Swans	500+
Hoary-headed Grebes	200+
Black Ducks	100+
Grey Teals	100+
Mountain Ducks	50+
Crested Grebes	50+

By April, and after heavy autumn rains, swans and ducks were much less numerous but Musk Duck, Coot and Grebe numbers showed little change.

The only published record covering the birds of the region was compiled by Serventy (1930) just 40 years ago, and listed 76 species. I have recorded the following 58 additions, several of which are highly dependent upon the wetlands of the area:—

Little Shearwater, *Puffinus assimilis* (dead on beach); Crested Grebe, *Podiceps cristatus;* Little Grebe, *P. novaehollandiae;* Hoary-headed Grebe, *P. poliocephalus;* Australian Gannet, *Morus serrator;* Australian Darter, *Anhinga rufa;* White Egret, *Egretta alba;* Reef Heron, *E. sacra;* White-necked Heron, *Ardea pacifica;* Nankeen Night-Heron, *Nycticorax caledonicus;* Grey Teal, *Anas gibberifrons;* Blue-winged Shoveller, *A. rhynchotis;* Maned Goose, *Chenonetta jubata;* Musk Duck, *Biziura lobata;* Black-shouldered Kite, *Elanus notatus;* Australian Goshawk, *Accipiter fasciatus;* Collared Sparrowhawk, *A. cirrocephalus;* Osprey, *Pandion haliaetus;* Little Falcon, *Falco longipennis;* Kestrel, *F. cenchroides;* Coot, *Fulica atra;* Pied Oystercatcher, *Haematopus ostralegus;* Sooty Oystercatcher, *H. fuliginosus;* Banded Plover, *Zonifer tricolor;* Grey Plover, *Pluvialis squatarola;* Large Sand-Dotterel, *Charadrius leschenaultii;* Mongolian Dotterel, *Ch. mongolus;* Black-fronted Dotterel, *Ch. melanops;* Whimbrel, *Numenius phaeopus;* Black-tailed Godwit, *Limosa limosa;* Bar-tailed Godwit, *L. lapponica;* Common Sandpiper, *Tringa hypoleucos;* Terek Sandpiper, *Xenus cinereus;* Turnstone, *Arenaria interpres;* Knot, *Calidris canutus;* Curlew Sandpiper, *Erolia testacea;* Sanderling, *Crocethia alba;* White-headed Stilt, *Himantopus himantopus;* Banded Stilt, *Cladorhynchus leucocephalus* (flocks were

present on Lake Preston in the late summer of 1971 in company with White-headed Stilts); Pacific Gull, *Larus pacificus;* Caspian Tern, *Hydroprogne caspia;* Domestic Pigeon, *Columba livia;* Spotted Turtledove, *Streptopelia chinensis;* Senegal Turtledove, *S. senegalensis;* Smoker, *Polytelis anthopeplus;* Pallid Cuekoo, *Cuculus pallidus;* Fan-tailed Cuekoo, *Cacomantis pyrrhophanus;* Broad-tailed Thornbill, *Acanthiza apicalis;* Spotted Scrub-Wren, *Sericornis maculatus;* Rufous Whistler, *Pachycephala rufiventris;* Western Shrike-Thrush, *Colluricincla rufiventris;* Brown Honeyeater, *Lichmera indistincta;* New Holland Honeyeater, *Phylidonyris novaehollandiae;* White-cheeked Honeyeater, *P. niger;* Yellow-throated Miner, *Manorhina flavigula;* Little Wattle-bird, *Anthochaera chrysoptera;* Magpie-lark, *Grallina cyanoleuca;* Black-faced Wood-swallow, *Artamus cinereus.*

The Premier's announcement ("West Australian," June 2nd, 1971) that Lake Clifton (4,378 acres) and Lake Preston (8,122 acres) would be added to the Yalgorup* National Park (10,000 acres) was a most important and step towards the preservation of these valuable wetlands but, unfortunately, 54 of the 66 miles of lake foreshore abut on private property and so extensive areas of fringe paper barks and other vegetation could still be destroyed. Fortunately however, some landholders have agreed to restriet clearing along the waterfront and it is hoped that others will follow suit.

Although considerable development has already occurred along the shores of the Peel Inlet and the Leschenault Estuary and much more is inevitable, these extensive wetlands complement the waters of the park and should be very carefully managed.

The matters requiring urgent consideration include the following:—

(1) The effect of the alumina refinery at Pinjarra.
(2) The effect of further dam construction on the major streams feeding the Inlet.
(3) The effect of subdivisions along the waterfront and any associated "improvement" of the foreshore.
(4) The effect of mining or mineral dredging, not only on the waters, but on the general biology of the area.

It cannot be over-emphasised that the waters of the Peel Inlet, Harvey Estuary and associated lakes comprise one of the most valuable tourist resorts in the South-West. This is due partly to the profusion of fish, crabs and prawns, but also to the scenic beauty which is enhanced by the presence of waterfowl, wildflowers and a tree-lined foreshore. Undue interference or over-development could completely destroy this unique area and produce conditions reminiscent of Perth Water. Extensive mudflats and shallows are essential for the survival of many forms of water-life including fish, prawns and crabs, and the preservation of long stretches of natural foreshore are important as shelter belts and breeding areas for both land and water birds.

In view of the complexity of the matters raised, the multiplicity of the interests involved and the speed with which the changes are taking place, it is necessary to collate all the information available on the area, to cushion the region as much as possible from the effect of industrialisation, and to maintain large areas for both active and passive recreation and for the protection of native plants and animals.

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*The Yalgorup National Park was gazetted an "A" Class Reserve and placed under the National Parks Board in January 1968. The name is a coined Aboriginal word, a combination of "Yalgor" meaning a swamp or lake with the widely used suffix "up" meaning a place.